Amendments to the Claims

This listing of claims replaces all prior versions and listings of the claims in the application.

Listing of Claims

1. (currently amended) A magnetic transducer writing device including a written transition having a curved portion, the device comprising:

a bottom magnetic pole;

a nonmagnetic gap layer deposited over said bottom magnetic pole;

a top magnetic pole deposited over the nonmagnetic gap layer and including a high moment material having a magnetic moment saturation greater than 1 Tesla ($B_{sat} > 1$ Tesla), the top magnetic pole having an upper portion and a lower portion wherein the lower portion of the top magnetic pole faces a surface of the bottom magnetic pole and wherein the lower portion has a middle section that is separated from the bottom pole by the nonmagnetic gap layer by a first distance and the lower portion has end portions located at each end of the middle portion that are separated from the bottom pole by the nonmagnetic gap layer by a second distance wherein the second distance is greater than 25% and less than 100% of the first distance, and the top magnetic pole reduces the curved portion of the written transition.

2. (original) The device of claim 1 wherein the second distance is at least 40% of the first distance.

3. (original) The device of claim 1 wherein the second distance is at least 50% of the first distance.

4. (original) The device of claim 1 wherein the second distance is at least 60% of the first distance.

5. (original) The device of claim 1 wherein the second distance ranges from about greater than 25% to about 60% of the first distance.

6. (original) The device of claim 1 wherein the device has a width (TPWG) measured between a left and a right side of the top magnetic pole wherein the width ranges from about 0.3 microns to about 1.5 microns.

7. (original) The device of claim 6 wherein the width ranges from about 0.3 microns to about 0.5 microns.

8. (original) The device of claim 6 wherein the first distance is about 30% of the width of the device.

9. (original) The device of claim 1 wherein the first distance ranges from about 0.1 microns to about 0.3 microns.

10. (original) The device of claim 1 wherein the first distance ranges from about 0.1 microns to about 0.15 microns.

11. (original) The device of claim 1 wherein the end portions each have a surface that is substantially parallel with the surface of the bottom magnetic pole.

12. (original) The device of claim 1 wherein the end portions are square in shape.

13. (original) The device of claim 1 wherein the end portions are wedged in shape.

14. (original) The device of claim 1 wherein the end portions have a surface that faces the surface of the bottom magnetic pole wherein the surface of the end portions are angled so that at one end of the end portion the distance between the end portion and the bottom magnetic pole is greater than at an opposite end of the end portion.

15. (original) The device of claim 14 wherein the distance is greatest between the end portions and the bottom magnetic pole at the end portion closest to the middle portion of the top magnetic pole.

16. (original) The device of claim 1 wherein each end portion of the top magnetic pole is defined by a segment connecting two points.

17. (original) The device of claim 16 wherein the segment is linear.

18. (original) The device of claim 16 wherein the segment is curvilinear.

19. (original) The device of claim 18 wherein the segment is convex with respect to the bottom magnetic pole.

20. (original) The device of claim 18 wherein the segment is concave with respect to the bottom magnetic pole.

21. (previously presented) The device of claim 6 wherein the bottom magnetic pole comprises a shared pole, a magnetic layer deposited on the shared pole wherein the magnetic layer has a width equal to the width of the device, and a nonmagnetic region deposited on the shared pole at each end of the magnetic region.